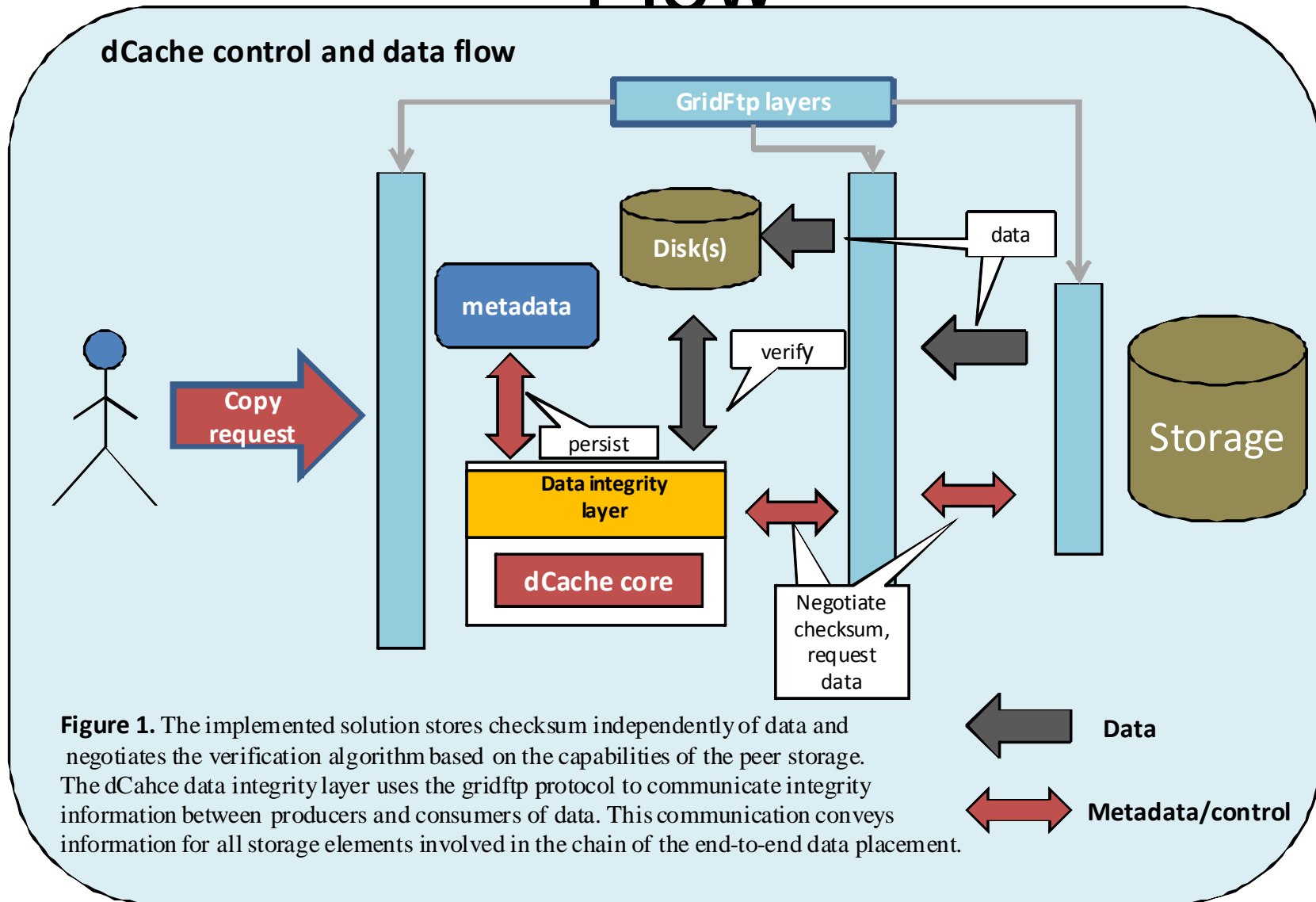


Compact Muon Solenoid (CMS) High Energy Physics Application at Fermi

- CEDPS team at Fermi implemented a checksum verification capability and integrated it with the dCache GridFTP server implementation
- CMS application scientists are heavy users of Fermi's dCache GridFTP implementation
- Move large quantities of data between CERN and Fermi Lab (a Tier 1 site)
 - Serves CMS data sets to physicists throughout the United States
- CMS uses the capability to verify checksums on approximately 10 Terabytes per day of data downloaded to Fermi Lab

dCache Control and Data Flow



CMS Application & dCache GridFTP Checksum Capability

- dCache checksum failures are used to flag hardware for preemptive replacement or maintenance
 - Improved the availability of hardware infrastructure
- Initial enabling of this capability revealed several deficiencies in a partner storage system in Europe
- This new checksum functionality triggered further development in other storage systems
 - E.g., CASTOR at CERN
 - Now ensure better quality of served data